Supplementary Notes on the Erysiphaceae

By E. S. Salmon, F.L.S.

Addenda

I have lately received from Professor Shotaro Hori a very interesting *Uncinula* from Japan (Tokio; coll. K. Yoshino, 6 Nov. 1901). The fungus presented these characters:

Perithecia truly amphigenous, mycelium subpersistent, very thin, effused; perithecia 85–120 μ in diam., cells of outer perithecial wall 10–14 μ wide; appendages 9–21, from slightly exceeding the diameter of the perithecium to 1.5 times its diameter, straight or slightly curved throughout their length, simple, colorless, aseptate, stout, about 7 μ wide in the lower half, not or only slightly enlarged upwards; apex closely coiled, not swollen, sometimes slightly helicoid, basal part of appendage becoming refractive and thick-walled; asci 4–6, broadly ovate, 45–50 × 28–30 μ, stalk very short; spores usually 4–6, rarely 3 or 7, very rarely 8, ellipsoid, rounded at the ends, 18–19 × 10 μ.

From typical *U. Sengokui* Salm., the above fungus differs only in the usually fewer appendages and in the fewer slightly smaller asci. The appendages also of the present form are, perhaps, more frequently straight, but otherwise, in shape, size, stoutness, etc., agree perfectly with those of typical *U. Sengokui*. When, as is often the case, the appendages are few and distant, the present form somewhat approaches *U. Delavayi* Pat., but that species differs in the larger cells of the outer wall of the perithecium, in the still fewer appendages which are distinctly swollen upwards, and in the larger asci and spores. When, however, the appendages are more numerous, the present form is seen clearly to be morphologically inseparable from *U. Sengokui*, of which it must, at any rate for the present, be considered a small form. *U. Sengokui* is only known on *Celastrus articulatus* (from Komaba, Tokyo), while the form described above was collected on *Fraxinus Bungeana* DC. var. *pubinervis* Wenz. This occurrence is especially interesting because hitherto the only *Uncinula* known to occur on *Fraxinus* was *U. fraxini* Miyabe (on *Fraxinus longicuspis*), a species

quite distinct from *U. Sengokui* in the longer narrower appendages, and the regularly 8-spored asci, etc.

I have also received from Professor Shotaro Hori some beautiful specimens of *Uncinula verniciferae* P. Henn. with perfectly ripe perithecia. These specimens were collected, some on the leaves of *Rhus vernicifera* DC. (Prov. Hidachi, Japan; 10 Oct. 1901), and some on the fruit of *R. succedanea* L. (Prov. Idzumo, Japan, coll. F. Tanaka, 12 Oct. 1901; and Prov. Miye, coll. N. Miura, 17 Oct. 1901). An examination of this material shows *U. verniciferae* to possess these characters:

Amphigenous on leaves and fruit, mycelium subevanescent on the leaves, persistent on the fruit; perithecia gregarious or scattered, subglobose, black, very variable in size, 80–140 μ in diam., cells of outer perithecial wall about 15 μ wide; appendages variable in number, 15–35, or rarely as few as 6, equalling, to 1½ times exceeding, the diameter of the perithecium, simple, or very rarely forked towards the apex, colorless, aseptate, about 6 μ wide at the base, lower half becoming thick-walled, refractive, and often rough, narrowed into a closely coiled sometimes helicoid apex; asci 3–9, broadly ovoid, 45–60 × 35–45 μ, stalk short; spores 6–8, rarely 5, ellipsoid, 20 × 11–12 μ.

U. verniciferae is extremely variable in the size of the perithecium and in the number of its appendages, but may be readily recognized by the appendages being narrowed upwards to the closely coiled apex.

With regard to the reported occurrence of *Sphaerotheca mors-uvae* in Belgium (*ante*, p. 94), I am now able to state on the authority of Professor E. Marchal that this record was due to a mistake, and is to be expunged.

Quite recently, however, Hennings (1) has reported the occurrence of *S. mors-uvae* in Russia — "Government of Moskau, Gut Michailowskoje," where it was collected by Mr. N. A. Mossolow in July 1901. Hennings (*l. c.*) observes of the fungus: "Derselbe tritt anscheinend epidemisch auf kultivierten Stachelbeeren auf. Eine Einschleppung des Pilzes aus Nordamerika oder aus anderen Gebieten hat zweifellos nicht stattgefunden, sondern es ist dieser Pilz jedenfalls in Russland heimisch." Magnus (2), on the other hand, has expressed his opinion that neither in Ireland nor in Russia is *S. mors-uvae* to be considered indigenous, but that it has been introduced from North America. The reason that Mag-

nus gives in support of his view is that if the fungus were indigenous to Ireland or Russia it would have certainly have been observed before, and would have spread to other countries.

With the object of obtaining further knowledge on the circumstances of the outbreak of the present fungus in Russia, I wrote to Mr. N. A. Mossolow and to Professor A. de Jaczewski, Vegetable Pathologist to the Minister of Agriculture, St. Petersburg. From the former I received the following information: "The infected gooseberry bushes were planted several years ago, and were bought in Petersburgh and in Riga. Various kinds of gooseberries were affected by the disease. The summer of 1901, when the disease appeared in Michailowskoje, was very hot and dry. We found the fungus in great abundance only on the fruit of the gooseberries and not on the branches. The fruit garden in which the gooseberries are growing is surrounded by the park and woods on one side; on the other side by a hedge of *Crataegus*. The fruit garden consists of apple trees, cherries, raspberries, strawberries, currants and a few hardy plants, *Rubus caesius*," etc. Professor A. de Jaczewski writes: "I do not know of the fungus having been found anywhere else in Russia than in the neighborhood of Moskau. I do not think, however, that there is any reason to believe that the parasite could have been introduced into Russia from America. We have a great many American fungi (on cultivated and wild plants) which could not have been introduced in any way (*Plasmopora Cubensis*, *Phytopthora phaseoli*, *Exobasidium platydiscus*). It is very probable that the *Sphaerotheca* is to be found in many localities here, but we have so few mycologists in Russia that there are scarcely any investigations on this subject, so that our knowledge on the geographical distribution of fungi in Russia is very defective."

LITERATURE.

1. **Hennings, P.** Uber die Verbreitung und das Vorkommen von *Sphaerotheca mors-uvae* (Schw.), dem Stachelbeer-Meltau, in Russland. Gartenfl. **51**: 170, 171. 1902.

2. **Magnus, P.** Ueber den Stachelbeer-Meltau. *l. c.*, 245–247.